United States
Department of
Agriculture

Forest
Service

**Pacific
Northwest
Region**

Record of Decision

Galena Project
(Forest Plan Amendment MAL-73)

Blue Mountain Ranger District,
Malheur National Forest

Grant County, Oregon

for the greatest good

Record of Decision
Galena Project
U.S. Forest Service, Region 6
Blue Mountain Ranger District
Malheur National Forest
Grant County, Oregon

Decision

This Record of Decision (ROD) documents my decision and rational in the selection of management activities for the Galena Project area described in the September 2013 Final Environmental Impact Statement (FEIS) titled *Galena Project*. I am the responsible official for this project. The scope of my decision is limited to the specific commercial harvest, pre-commercial thinning, prescribed burning, road construction, road reconstruction, road maintenance, road closures, road decommissioning, and aspen restoration described in the Galena Project FEIS and this Record of Decision. On a landscape scale, the project works toward the goal of meeting Forest Plan goals and objectives by moving forest stands toward a historic range of variability (HRV), improving forest resiliency and health, and reducing the risk of, and increasing resistance to large scale disturbance from insects, disease, and high intensity, high severity wildfire. The decision I am making is site specific. It is not programmatic and is not a general management plan for the area. This decision does not preclude the need for future decisions to help meet the desired conditions for the Galena Project Area. Additional projects may be necessary to achieve Forest Plan goals not met by this decision. After appropriate analysis and public involvement, separate decisions will be issued on actions not included in this decision.

Based on my review of the Final Environmental Impact Statement, which includes three action alternatives and a no action alternative, I have decided to implement Alternative 4, with modifications (4M).

In summary, my decision encompasses an area of approximately 37,200 acres in the Middle Fork of the John Day River about 28 miles northeast of John Day, Oregon. This decision also includes two non-significant amendments to the Malheur Forest Plan: one to increase the size and number of designated and replacement old growth areas in Management Area 13 (Old Growth); the second to reduce satisfactory big game cover below forest standards to meet forest health and fuel reduction treatment objectives in big game summer and winter range (Forest Wide Standard 28 and Management Area 4a). My review of the Forest Plan amendments proposed in the EIS relative to significance under the National Forest Management Act implementing regulation can be reviewed on pages 6-10 of this decision.

This decision will implement several resource management activities including:

Vegetative Treatments

Alternative 4 in the Final Environmental Impact Statement, responds to the need for action to improve forest health by moving stands towards historic conditions. This alternative treats more acres than Alternatives 2 or 3 with minimal differences in the ecological effects of either of the above mentioned alternatives. This action would authorize activities in five categories: commercial harvest, pre-commercial thinning, prescribed burning, associated road activities, and aspen stand restoration.

Commercial Harvest: A combination of commercial thinning, understory removal, and return to early seral species would best meet the objectives of the project as described in the purpose and need section in Chapter 1 of the EIS. There would be no commercial harvest within RHCAs. Commercial harvesting of trees will occur on 232 units covering approximately 8,363 acres, producing approximately 30.8 Million Board Feet (MMBF) in volume utilizing silviculture prescriptions as follows:

- Commercial Thinning will occur on 145 units totaling approximately 5,681 acres
- Understory Removal will occur on 34 units totaling approximately 798 acres
- Return to Early Seral Species will occur on 53 units totaling approximately 1,884 acres

Harvest Systems: The units identified for commercial harvest will be yarded via tractor or skyline as follows:

- Tractor yarding will occur on 140 units covering 5,764 acres
- Skyline yarding will occur on 69 units covering 1,863 acres
- Helicopter yarding will occur on 23 units covering 736 acres

Pre-commercial Thinning: Pre-commercial thinning would remove trees from 1-9 inches dbh that are not economically merchantable in size. Cull trees (generally those heavily infected with mistletoe) would be removed up to 12 inches dbh, leaving on average one per acre for wildlife. Pre-commercial thinning (including pile burning) would not occur within RHCAs. Pre-commercial thinning will occur on 88 units covering approximately 2,878 acres as follows:

- Pre-commercial thinning will occur on 45 units covering approximately 1,373 acres
- Pre-commercial thinning in commercial thinning units will occur on 43 units covering approximately 1,505 acres.

Pre-commercial thinning material may be utilized for post and pole or biomass. Most material not used for consumer products would be hand piled and burned. The remaining slash would leave a fuel profile of no more than 7-10 tons per acre to provide for future nutrient recycling.

Prescribed Burning

This decision includes prescribed fire, specifically underburning and pile burning as follows:

- Underburning (ignition) on 19,913 acres
- Hand and Grapple Pile Burning of localized piles on 9,778 acres
- Landing Pile Burning of approximately 1,070 piles

Aspen Restoration

Aspen restoration will occur on 28 aspen stands comprising a total of approximately 35 acres. There are three actions proposed to protect aspen stands and improve regeneration and vigor as follows:

- Thinning of conifer trees under 21” dbh that have grown into aspen stands to reduce competition for light and water.
- Construction of fences around aspen stands to reduce grazing pressure from livestock and wildlife.
- Underburning of aspen stands that are in or next to a prescribed burning unit.

Road Activities

- 9.3 miles of new road construction
- 8.5 miles of temporary road construction
- 69.7 miles of road maintenance
- 26.3 miles of road reconstruction
- 21.2 miles of road decommissioning
- 17.3 miles of road closures on currently open roads
- 115.4 miles of road haul in the project area
- 131.8 miles of total road haul (includes roads outside project boundary)
- 6.2 miles of roads relocated from Riparian Habitat Conservation Areas

Modifications to FEIS from Alternative 4

My decision modifies Alternative 4 in the EIS with the following adjustments:

- I have decided to drop Unit 140 consisting of 8 acres. This unit is along the edge of a goshawk Post Fledgling Area (PFA) and is Old Forest Multi-strata (OFMS) containing many age classes and vegetative layers with large old trees. OFMS fits the goshawk's preferred habitat for PFAs which is composed of structurally complex, late succession mixed conifer and ponderosa pine forest.
- I have decided to drop Unit 338 consisting of 34 acres in order to provide an additional buffer between the Vinegar Hill Scenic Area containing Designated Old Growth and the treated acres under this decision. The above reductions reduce the helicopter unit acreage to 736 acres.
- I have decided to reduce the amount of new road construction within the project area by 5.4 miles as originally disclosed in Alternative 4. Treatment units accessed by these roads will now be accessed by temporary roads that will be rehabilitated immediately following harvest activities. The remaining 9.3 miles of new road construction will occur to replace roads causing resource damage in sensitive areas. I decided to modify the decision in response to feedback regarding the proposed road construction in Alternative 4 through public comment, discussions with the Blue Mountains Forest Partners Collaborative (BMFP), and to prepare for the possible future expansion of the Forest's Collaborative Forest Landscape Restoration (CFLR) program boundary to include the Galena Project area. Table 1 below identifies which roads will be replaced by temporary roads. As a result of the modification of this Decision there will be 9.3 miles of new road construction as opposed to the 14.7 miles proposed in Alternative 4 of the FEIS. Because of this shift in new road construction, temporary road construction and rehabilitation will increase to 8.5 miles as opposed to the initial 3.1 miles proposed in Alternative 4. This will allow us to treat the same number of acres while reducing the long term effects from road construction. To insure that these roads will be closed I am directing the team to include these closures as part of the timber contract to be completed prior to sale closing.

Table 1. Road numbers and miles for roads converting from new construction to temporary roads.

Road Number	Miles
2010631a	0.66
2010072c	0.60
2010993a	0.29
2010046b	0.58
4550592a	0.58
2612672a	0.15
2612672b	0.20
2614331b	0.36
2614000b	0.35
2614452a	0.43
2614453a	0.44
2614452f	1.06
Total	**5.4**

Terms and Conditions of the Biological Opinions

Endangered Species Act (ESA) Section 7 Consultation has occurred with the United States Fish and Wildlife Service and the National Marine Fisheries Service for activities associated with the Galena Project. Reasonable and Prudent Measures and Terms and Conditions from ESA section 7 consultations with USFWS and NMFS are non-discretionary and must be implemented as part of the Galena Project proposed action to minimize the amount or extent of incidental take of bull trout and steelhead. The terms and conditions associated with these Biological Opinions have been incorporated into this decision and are located in Appendices E, F, and H of the Galena Project final environmental impact statement.

Forest Plan Amendments and Evaluation of Significance

The Galena Project proposed two Forest Plan Amendments in the Galena Project Environmental Impact Statement. The following documentation is my review of the Forest Plan amendments proposed in the FEIS relative to significance under the National Forest Management Act implementing regulation.

The Forest Service Land and Resource Management Planning Manual (Forest Service Manual 1926.51) lists the changes to the land management plan that are not significant can result from:

1. Actions that do not significantly alter the multiple use goals and objectives for long term land and resource management (Forest Plan Level).

2. Adjustments of management area boundaries or management prescriptions resulting from further on-site analysis when the adjustments do not cause significant changes in the multiple use goals and objectives for long term land and resource management.
3. Minor changes in standards and guidelines.
4. Opportunities for additional projects or activities that will contribute to the achievement of the management prescription.

Proposed Amendments

Adjust and Expand Dedicated Old Growth Habitats (DOGs) and Create New Replacement Old Growth Habitats (ROGs)

Amendment: All action alternatives would require a Forest Plan amendment to the Malheur National Forest Land and Resource Management Plan (Forest Plan), Management Area 13 (MA13). The Forest Plan standards for old growth habitat identified for MA13 are found in Chapter IV, pp. 105-106. Standards specific to old growth habitat are Standards 3 through 8 and Appendix G, Forest Plan FEIS. The Forest Plan Standards state:

3. Provide old growth by dedicating approximately two-thirds of the acres in this management area (47,690 acres) to the retention of suitable old growth. Refer to Appendix G, FEIS for stand type, size, and distribution criteria.
4. Inventory and validate all old growth areas. Correct previously dedicated old growth unit designations that are not meeting management requirement direction where possible. Utilize the interdisciplinary process to develop recommendations for boundary adjustments, or unit relocation. Changes will require approval by the Forest Supervisor. Unit relocation must analyze location in regards to the total old growth network, which in most cases will be a larger analysis area than that used for timber sale planning.
5. To counter possible catastrophic damage or probable deterioration of dedicated old growth, provide for replacement old growth in the future by managing at least one third of this management area (25,000 acres) for a sustained yield of old growth. Locate replacement old growth areas within ¼ mile dedicated areas, and designate and map these areas. Provide old growth replacement areas that are one-half the size of its corresponding dedicated old growth unit. Refer to Appendix G, FEIS for stand type, size, and distribution.
6. When locating replacement old growth areas, use interdisciplinary teams that evaluate and recommend replacement stands for District Ranger approval. Complete the location of replacement stands primarily in conjunction with the timber sale planning process. Record site-specific information in the TRI data base.
7. As dedicated old growth stands deteriorate beyond suitable old growth conditions, maintain at least two-thirds of this management area in dedicated stands by manipulating replacement and dedicated stand boundaries by: (a) changing the status of dedicated old growth to replacement habitat and take action to restore the habitat to suitable old growth conditions; and (b) changing the status of replacement old growth to dedicated old growth.
8. Utilize interdisciplinary teams to develop prescriptions and long-term management strategies for each replacement area with the principle responsibilities to silviculturalists and wildlife biologists.

Appendix G of the Forest Plan provides specific size requirements for MA13 through the system of DOGs and ROGs to maintain population viability of pileated woodpecker and pine marten. Appendix G delineates a forest wide system of dedicated old growth with one DOG for every 12,000 acres. The Forest Plan directs that pileated woodpecker areas are to be 600 acres, composed of a 300 acre DOG and a 300 acre Pileated Woodpecker Feeding Area (PWFA). ROGs are intended to be ½ the size of DOGs and can overlap PWFAs. Pine marten units are required to be 240 acres, composed of a 160 acre DOG and an 80 acre ROG. When DOGs are managed for both species the size requirement is at the 600 acre home range recommended for pileated woodpeckers.

Amendment Rational: This amendment is proposed because within the project area, the number of acres set aside or old growth habitat is currently below Forest Plan standards. The proposed Forest Plan Amendment would redraw Management Area 13 boundaries for existing areas and delineate boundaries for new areas to bring total acres for DOGs and ROGs up to Forest Plan Standards.

Amendment Evaluation of Significance:

1. *Actions that do not significantly alter the multiple-use goals and objectives for long-term land and resource management (Forest Plan Level).*

   The intent of the proposed Forest Plan Amendment is to bring the acres of Management Area 13 up to Forest Plan standards. The Forest Plan identified minimum acreage standards to meet the multiple use goals and objectives for long term management of the Forest. In addition, the proposed amendment would meet the intent of the Regional Forester's East Side Forest Plan Amendment 2 to maintain and enhance late and old structure (LOS) forest stands for wildlife dependent on these habitats. Part of the purpose and need of this project was to accelerate the development of future LOS single stratum wildlife habitat. This proposed amendment would aid in the protection and development of LOS for pileated woodpecker and pine marten by bringing acreages for Management Area 13 up to Forest Plan Standards.

   This site specific amendment would not alter other multiple-use goals and objectives for long-term land management on the Malheur National Forest.

2. *Adjustments of management area boundaries or management prescriptions resulting from further on-site analysis when the adjustments do not cause significant changes in the multiple use goals and objectives for long-term land and resource management. (MA area)*

   The adjustment of DOG and ROG boundaries would bring the acres under MA13 up to Forest Plan standards. Adjusting the management area boundaries would help move the Forest towards meeting long-term land and resource management goals.

3. *Minor changes in standards and guidelines.*

   There would be no changes to standards and guidelines for any of the management areas within the project area.

4. *Opportunities for additional projects or activities that will contribute to achievement of the management prescription.*

   This amendment would not result in additional projects or activities that would impact DOGs and ROGs within the project area.

Reduce Satisfactory Cover Below Forest Plan Standards

Amendment: Satisfactory cover, already below Forest Plan standards, would be further reduced. Satisfactory cover for winter range in the Little Boulder Creek/Deerhorn subwatershed is currently 5%, which is below the Forest Plan standard of 10%, and would be further reduced to 4.9%. Satisfactory cover for summer range in the Vinegar Creek Subwatershed is currently 8.2%, which is below the Forest Plan Standard of 12%, and would be further reduced to 7.3%. The Proposed Action would reduce satisfactory cover within big game summer range on 128 acres in the Vinegar Creek Subwatershed and by 3 acres within big game winter range in the Little Boulder Creek/Deerhorn Subwatershed. Total cover in both sub-watersheds would still exceed standards in the Middle Fork Watershed**.** All of the proposed treatment units are within the warm dry forest biophysical environment. Forest Plan standards for big game cover on summer range and big game cover on winter range is as follows:

Forest Wide Standards

28. Manage elk and deer summer range to provide for 20% cover and an elk habitat effectiveness index (HEI) of 0.4.

    The minimum for satisfactory cover given in Forest Wide Standard 28 is 12%.

MA 4A Big Game Winter Range Maintenance

1. Manage elk and mule deer winter range habitat to provide 25% cover and an elk habitat effectiveness index (HEI) of 0.5.

The minimum satisfactory cover given in MA 4A, Standard 4 is 10%.

Amendment Rational: This amendment was proposed for all action alternatives in order to meet the purpose and need of restoring forested lands within the project area to more closely resemble the historic range of variability (HRV) of species composition, density, and stand structure, especially within the warm dry and hot dry biophysical environments; and to reduce surface fuel loads, ladder fuels, and crown density resulting in reducing the potential for large, stand replacing crown fires. Historical conditions and fire return intervals favored large blocks of single story, mature stands with canopy closure too low to support large blocks of satisfactory or marginal cover. Under historical conditions, cover percentages would be inherently low, probably below Forest Plan standards. Today, cover requirements are being met on many ponderosa pine sites; however, stands are overstocked and at high risk to bark beetle attack and uncharacteristically severe wildfires. Unfortunately, tree thinning, the treatment that most effectively reduces beetle and fire risk, also reduces the effectiveness of a stand as cover. The potential negative effects of removing understory trees would be reduced by the design requirement to retain un-thinned patches of dense trees throughout the project area. The reduction of satisfactory cover would be offset by the increase in forage as a result of the reduction of canopy cover. The HEI index for roads would increase through the closing of roads to reduce road density within the project area. HEI would remain above Forest Plan Standards for both summer and winter range within the project area.

Amendment Evaluation of Significance

1. *Actions that do not significantly alter the multiple-use goals and objectives for long-term land and resource management (Forest Plan Level).*

   The Forest Plan goal for big game is to provide for the maintenance and enhancement of big game habitat so as to sustain elk and deer populations at the state management objective level. The management objectives (MO) set by the Oregon Department of Fish and Wildlife for the

hunting units within the project area has been at or near the MO for population. The Desired Future Condition in the Forest Plan for big game states: "*Big-game habitat effectiveness will increase through vegetation manipulation and road management. Total forest open road mileage will be reduced approximately 30% to meet HEI standards within each of the seven watersheds. Total cover will decrease to 51%. Close coordination on forage utilization by big game and livestock and the application of enhancement techniques will result in increase of browse condition and forage quality and quantity*." The project would result in an increase in forage production as a result of the reduction in cover. In the HEI model, increases for forage compensates for the reduction in cover. In addition, the increase in HEI from reduced open road densities also helps compensate for the reduction in cover. Where road densities are reduced, elk security is increased, allowing animals to utilize increased forage. The projects activities would ultimately move the Forest toward the Forest Plan's Desired Future Condition for big game. Short term, the reduction of canopy cover and hiding cover may impact elk distribution at the local level, but would not be expected to affect elk population number or viability at the forest level.

This site specific amendment would not alter other multiple use goals and objectives for long term land management on the Malheur National Forest.

2. *Adjustments of management area boundaries or management prescriptions resulting from further on-site analysis when the adjustments do not cause significant changes in the multiple use goals and objectives for long-term land and resource management. (MA area)*

   No changes or adjustments in management area boundaries or designations would occur as a result of this amendment.

3. *Minor changes in standards and guidelines.*

   There would be no changes to standards and guidelines for any management area due to this amendment. This is a site specific amendment to Forest Wide Standard #28 and Big Game Winter Range MA 4A and would apply only for the duration of, and to the actions proposed for this project, and is proposed based upon the site specific conditions in the project area.

4. *Opportunities for additional projects or activities that will contribute to achievement of the management prescription.*

   The amendment would not result in additional projects or activities that would impact big game satisfactory cover.

Based upon the above evaluation I believe that both of the proposed Forest Plan Amendments are not significant under the National Forest Management Act implementing regulation.

Background

The needs for the proposed action are derived from the difference between current conditions and desired conditions. Desired conditions are based on Forest Plan direction and management objectives. Moving forest stands toward HRV and improving forest health is desirable because such conditions provide increased forest resiliency over the long-term. Specifically the purposes of this project are to:

1. Promote a change in tree species composition, stand densities, and structure to develop a trend toward more resilient historic vegetative conditions in upland forested stands.

2. Reduce the fuel loading by reducing the density of standing vegetation, surface fuels, and ladder fuels. Reduce fuels along County Road 20 which is identified as an escape corridor in the Grant County Community Fire Protection Plan.
3. Provide a safe road system that meets current public and management access needs, while reducing the risk of sediment reaching streams and impacts to aquatic species and wildlife habitat.
4. Accelerate development of future late and old structural (LOS) single-stratum wildlife habitats.
5. Improve wildlife habitat for old growth dependent species by adjusting dedicated old-growth (DOGs) areas, identifying replacement old-growth (ROGs) areas, and identifying pileated woodpecker feeding areas (PWFAs) to meet Forest Plan standards.
6. Improve aspen stands and the associated wildlife habitat by creating conditions that will allow for successful regeneration and development into mature trees and stands.
7. Provide wood products to help maintain community stability and infrastructure.

Decision Rationale

It is my decision to implement Alternative 4 with modifications, here after call 4M, including the associated connected actions, forest plan amendments, biological opinion terms and conditions, design criteria, and monitoring described in the Final Environmental Impact Statement. My conclusion is based upon a review of the FEIS and project record, which includes a thorough review of relevant scientific information, a consideration of responsible opposing views, and the acknowledgement of incomplete or unavailable information, scientific uncertainty, and risk.

In selecting Alternative 4M, I carefully considered the disclosures in Chapter 3 of the FEIS in making my decision. My decision was based upon several conclusions as a result of my consideration of the effects of the project on the environment. Notable conclusions include:

- Alternative 4M would treat the most acres with the greatest mix of activities without significant differences in effects to the environment when compared with the other action alternatives.
- Alternative 4M would bring more of the area (approximately 20%) into a historic range of species composition and structure, and increase the resiliency and sustainability of the area to natural disturbances. In addition, this alternative will move more of the project area toward historic fuel conditions by reducing surface, ladder, and crown fuels which would proportionately decrease the risk of uncharacteristically large, stand replacing wildfire.
- Alternative 4M would provide additional fuel breaks and more defensible space to provide for public and firefighter safety between the Dixie Butte IRA and the County Road 20 escape corridor identified in the Grant County Community Fire Protection Plan. In order to access one area it will be necessary to construct a new road with a culvert across Deerhorn Creek to access an orphaned road system. There have been concerns raised by the public as well as members of the Blue Mountains Forest Partners (BMFP) collaborative group about constructing this road and crossing; however, there was general agreement from the BMFP that the area needs to be treated and is therefore I believe that providing access to this area is important. This topic is discussed in more detail in succeeding sections of this decision.
- Alternative 4M would provide access to treat the area discussed above and to reconnect an orphaned road system west of Deerhorn Creek for future administrative and management needs

as well as providing safe and effective access for fire suppression efforts. This road system was orphaned when a ford across the Middle Fork John Day River was closed off due to public safety and habitat concerns for listed fish species. The new road will provide the opportunity to permanently decommission the ford and the current road up from the river that connects to the orphaned system roads. This will reduce future detrimental effects from having to utilize the ford across the Middle Fork John Day River to access this area for management needs. The decommissioning of the ford and road will be analyzed and implemented once the new road has been constructed providing alternate access to the area.

- Alternative 4M will provide 272 local jobs per the analysis and aid in establishing agency goals for rural stability.
- Alternative 4M will allow the agency to package helicopter units with previous decision documents to allow for a more viable sale while improving stand and resource conditions.
- Alternative 4M will provide access to the numerous mining claims within the area while reducing risks to the aquatic resource.

Competing demands placed upon the Forest Service dictate that I make decisions for the responsible management of ecosystems that fulfill the mission of the Forest Service and meet the requirements of laws and regulation. Every effort has been made to develop and choose an alternative that best responds to the components of the Purpose and Need, Forest Plan Desired Condition and Standards, is responsive to public and agency concerns, and maintains key resource values.

Response of Alternative 4M to the Purpose and Need

The purpose and need for this project are derived from the social and environmental differences between current conditions and desired conditions. Desired conditions are based on Forest Plan direction and management objectives. Moving forest stands toward HRV and improving forest health is desirable because such conditions provide more sustainability over the long-term. Specifically the purposes of this project are to:

1. **Promote a change in tree species composition, stand densities, and structure to develop a trend toward more resilient historic vegetative conditions in upland forested stands.**
   The proposed treatments in Alternative 4M will restore forested stands in the project area to more closely resemble historical conditions that are more sustainable than current conditions. Forested stands within the project area are outside the historic range of variability (HRV) throughout the project area in species composition and stand density, but especially in the Hot Dry and Warm Dry forest types where the majority of the treatments will occur. Existing structure in the Hot Dry and Warm Dry forest types are currently well below HRV for old forest single strata (OFSS) and old forest multi-strata (OFMS) as shown in Table 8 of the FEIS. Old forest single strata stands currently comprise 1% of the warm dry forest type and are totally absent in the hot dry forest type. Some of the OFMS stands will be converted to OFSS stands by removing the understory. Thinning stands will increase the proportion of early seral tree species and will shift the stands to primarily ponderosa pine and western larch as well as reduce stand densities to more historical conditions. Reducing the density of trees decreases competition and increases the health and vigor of trees. This results in increased survival against insects, disease, and wildfires. Reducing density will also increase the growth rate of the remaining trees moving the stands toward late old structure (LOS) forests.

Response to Forest Plan Desired Conditions and Standards: This purpose and need responds to the following Forest Plan standard:

- Manage forest for species composition, stand density, and structure to move toward HRV in upland forests (The Regional Forester's Forest Plan Amendment No.2, USDA 1995a)

2. **Reduce the fuel loading by reducing the density of standing vegetation, surface fuels, and ladder fuels. Reduce fuels along County Road 20 which is identified as an escape corridor in the Grant County Community Fire Protection Plan.**

   The proposed thinning and fuel treatments in Alternative 4M will reduce the large scale fire hazard and reduce surface fuel loads, ladder fuels, and the crown density. Due to the absence of low intensity frequent fire and increased mortality from insect and disease, present fuel loads have increased beyond historical levels. This decision is intended to reduce the chance of a surface fire becoming a crown fire and a small fire becoming an uncharacteristically severe wildfire.

   Response to Forest Plan Desired Conditions and Standards: This purpose and need responds to the following Forest Plan standard:

   - Reduce risks of fire severity and insect damage by maintaining stand vigor through the use of activities such as stocking level control (Forest Plan standard 98, pp IV-37).
   - Manage residue (*fuel*) profiles at a level that will minimize the potential of high intensity catastrophic (*uncharacteristic*) wildfires and provide for other resource objectives in individual management areas (Forest Plan Standard 181, pp IV-45).

3. **Provide a road system that meets public and management access needs, while reducing the risk of sediment reaching streams, and impacts to aquatic species and wildlife habitat.**

   Alternative 4M proposes maintenance and reconstruction of roads within the project area to provide a safe transportation system, correct resource damage associated with roads, and meet system road maintenance objectives. This alternative will construct new permanent system roads that will maintain public access to the area while allowing low standard roads located in riparian areas to be decommissioned. To improve fish habitat there is a need to move roads out of riparian areas reducing the amount of sediment moving into streams. These native surface roads, currently located in Riparian Habitat Conservation Areas (RHCA), would be relocated to the uplands reducing the amount of sediment entering the streams while still providing access needs for the public and management.

   Alternative 4M would also construct a new road spanning 1.2 miles connecting an orphaned road system with the existing transportation system within the Deerhorn Creek drainage. This road system was orphaned when a ford across the Middle Fork John Day River (MFJDR) was closed due to public safety and habitat concerns for ESA listed fish species. The orphaned road system is currently being accessed by overland travel in several locations along Deerhorn Creek and the closed ford on the MFJDR. The new road will provide the opportunity to permanently decommission the ford across the MFJDR and approximately ¼ mile of road up from the river that connects to the orphaned system roads in the future. This will reduce additional detrimental effects from having to utilize the ford across the Middle Fork John Day River to access this area for administrative needs as well as curtail unauthorized use. The damage caused by overland

travel at several unimproved stream crossings on Deerhorn Creek and the MFJDR would be reduced. The orphaned road system will be re-closed at the conclusion of project activities to provide security for wildlife.

To improve wildlife habitat and to provide security for big game, Alternative 4M will reduce disturbance caused by motorized use on roads in the project area through the decommissioning and closing of roads. Currently the open road density within the project area meets Forest Plan Standards of 3.2 mi/mi^2 (Forest Plan IV-29, #33), however, it does not meet the Forest Plan's future desired condition of 1.5 mi/mi^2 in summer range and 1.0 mi/mi^2 in winter range. While past projects have closed a number of roads, additional road closures and decommissioning with this alternative would improve elk security by decreasing road density to meet the Forest Plan desired condition with 1.4 mi/mi^2 open road density within with project area.

Response to Forest Plan Desired Conditions and Standards: This purpose and need responds to the following Forest Plan standards:

- Minimize density of open roads in riparian areas by decommissioning unnecessary roads in riparian areas (Forest Plan standard 41, pp IV-67).
- Maintain fish passage on fish-bearing streams (Forest Plan Standard 46, pp IV-67)
- Utilize road and/or area closures to achieve specific wildlife habitat management objectives of individual management areas (Forest Plan Standard 35, pp IV-29)

4. **Accelerate development of future late and old structural (LOS) single-stratum wildlife habitats.**

The proposed activities in Alternative 4M increase the amount of future wildlife habitat for species dependent on LOS single- stratum old growth areas. The proposed treatments in some units will accelerate the development of old forest structural stages by allowing thinned stands to grow into large size classes sooner. As a result of proposed activities in Alternative 4M, the hot dry biophysical environment OFSS is expected to increase from 0% to 41% and in the warm dry biophysical environment OFSS is expected to increase from 1% to 17% over the next 40 years.

Response to Forest Plan Desired Conditions and Standards: This purpose and need responds to the following Forest Plan standard:

- Develop historical levels of OFSS forest habitat for species dependent on large, open grown ponderosa pine stands (The Regional Forester's Forest Plan Amendment No.2 USDA 1995a).

5. **Improve wildlife habitat for old growth dependent species by adjusting dedicated old-growth (DOGs) areas, identifying replacement old-growth (ROGs) areas, and identifying pileated woodpecker feeding areas (PWFAs) to meet Forest Plan standards.**

The Forest Plan Management Area 13 (MA-13) provides for the management of old growth habitat through a system of Dedicated Old Growth (DOG) and Replacement Old Growth (ROG) units. Alternative 4M increases the amount of DOGs with the associated Pileated Woodpecker Feeding Areas (PWFAs) and ROGs which are currently is below Forest Plan standards by adding 1,941 additional acres to MA-13 that meet Forest Plan criteria for old growth. The additional acres would bring all of the units to a level that meets or exceeds Forest Plan standards.

Response to Forest Plan Desired Conditions and Standards: This purpose and need responds to the following Forest Plan standard:

- Manage for old growth habitat through a system of Dedicated Old Growth (DOG) and Replacement Old Growth (ROG) units to provide for pileated woodpecker and pine martin viability (Forest Plan standards for MA-13, pp IV-105 & 106).

6. **Improve aspen stands and the associated wildlife habitat by creating conditions that will allow for successful regeneration and development into mature trees and stands.**
Aspen is a shade intolerant, early seral species occurring in small isolated stands throughout the project area and once played a larger part of the historical forest composition. Encroaching conifers, over-browsing by livestock and wildlife, and lack of low intensity wildfire have caused the decline in the quantity and quality of aspen stands. Alternative 4M proposes three actions to protect aspen and improve aspen regeneration and vigor. The first is to thin conifer trees that have encroached into aspen stands to reduce competition for light and water, second is construction of fences around stands to reduce ungulate browsing, and third is underburning of stands that are in or adjacent to prescribed fire units.

   Response to Forest Plan Desired Conditions and Standards: This purpose and need responds to the following Forest Plan standard:

   - Provide conditions that would allow aspen to improve vigor and regenerate (Forest Plan standards 8, 9, & 14 for MA-3b, pp IV-63, IV-64).

7. **Provide wood products to help maintain community stability and infrastructure.**
Alternative 4M provides approximately 31 mmbf of volume which is an increase of 23% over Alternative 2 and an increase of 55% over Alternative 3. A review of Chapter 3 of the FEIS shows the increase in volume of Alternative 4M is accomplished without significant differences in the anticipated effects to the environment when compared with the other action alternatives. Based upon my review of the FEIS, I have concluded that Alternative 4M can provide the additional volume with little or no additional effects to the human environment while providing more wood products for the local economy. The Forest Plan includes direction to provide a sustainable flow of timber and associated wood products that would contribute to economic stability and provide an economic return to the public.

   Response to Forest Plan Desired Conditions and Standards: This purpose and need responds to the following Forest Plan standard:

   - Provide wood products to local community on a sustained yield basis while providing for other resources (Forest Plan goals for MA-1, pp IV-50).

Response of Alternative 4M to the Key Issues

The following issues were identified from scoping comments and were used to determine the scope of the analysis:

Key Issue 1

- Construction of new and temporary roads could cause resource damage in the project area such as channelizing water, erosion, disturbance to wildlife habitat, and the spread of invasive weeds.
- Measurement indicator: Presence or absence of new and temporary roads constructed by miles, road density or acres disturbed.

Alternative 3 was specifically developed in response to Key Issue #1 by not building temporary roads, constructing approximately 1.1 miles of new roads, decommissioning approximately 21 miles of road, and road closures to provide a net increase of 4.8 miles of closed roads in the project area (pp. 31-32; FEIS).

Alternative 4M, responds to this issue by only building roads that are intended to offset roads that are causing resource damage or are poorly located on the landscape. Roads previously analyzed as new construction in the FEIS intended to access units identified for treatments will now have temporary roads constructed and then rehabilitated immediately after harvest activities. New road construction will now be used to relocate roads out of riparian areas (to allow for decommissioning of roads causing resource damage) and to provide a safe and efficient road system. Approximately one mile of new road will be constructed to access the orphaned road system in the Deerhorn drainage and allow for the future decommissioning of a ford across the Middle Fork John Day River which will reduce impacts to water quality and aquatic species habitat. The road construction in Alternative 4M also responds to this issue by incorporating design elements to minimize impacts of new and temporary road construction, rehabilitating temporary roads, decommissioning approximately 22 miles of roads (including 6.2 miles relocated out of riparian areas), and closing roads to provide a net increase in closed roads and bringing the road density in the project area to a level at or below Forest Plan Standards and closer to the desired future condition for road densities (pp. 33-35; EIS).

Key Issue 2

- An increased amount of commercial thinning, providing more merchantable sawlogs from the same land base, could provide more stability to the local community economic infrastructure.
- Measurement indicator: Volume of merchantable timber from commercial thinning.

Alternative 4M was developed in response to Key Issue #2 by increasing the number of commercial thinning units from the proposed action (pp. 33; FEIS).

Key Issue 3

- Lack of aerial treatment of fuels in unroaded areas would increase fuel hazard.
- Measurement indicator: Acres of units identified for commercial harvest via helicopter yarding.

Alternative 4M was developed in response to Key Issue #3 by adding additional units that would require helicopter yarding. Helicopter yarding would occur in 23 units totaling approximately 736 acres (pp. 34; FEIS).

Response of Alternative 4M to Analysis Issues

The following analysis issues were developed from issues or concerns raised by the interdisciplinary team working on the project as well as those received from the public or other agencies that reflect the potential effects of the proposed action or action alternatives would have on other resources or the environment. Some of the issues raised concerned findings required by the National Environmental Policy Act related to law, regulation, and policy while others are issues to be analyzed. Analysis issues are analyzed in detail

in Chapter 3 by resource and were used to compare effects of the alternatives. Findings along with other legally required disclosures are discussed on page 26 of this Record of Decision.

Hazardous Fuels

Whether proposed fuel treatment levels would begin to move the project area to meet the intent of the Forest Plan standard for fuel profiles that will minimize the chance for high intensity uncharacteristic wildfire. *Measure: Percent Change in crown fire potential after completion of each alternative 40 years into the future*

- Thinning proposed in Alternative 4M would occur on 15% more area than Alternative 2 and 30% more area than Alternative 3 and would have a proportionately improved effect of reducing the risk of large-scale stand replacing wildfires. In 40 years it is expected that Alternative 4M will reduce the area with medium to extreme crown fire potential and increases area with low crown fire potential by about 14% over the No Action alternative due to the reduction in fuel load and ladder fuels (pp. 118; FEIS).

Water Quality

Proposed harvest, road construction, and prescribed burning could reduce water quality. *Measure: Watershed Hazard*

- Alternative 4M incorporates Best Management Practices and Terms and Conditions outlined in the USFWS and NMFS biological opinions. Watershed hazard is defined as the increased connectivity between topographic features that causes increased overland flow. Ground disturbing activities associated with this decision have the potential to increase concentrate and channel overland flow proportionally to the amount of disturbance. Watershed hazard would remain moderate in the first ten years. Hazard would decrease toward low as harvest units and decommissioned roads recover. In the Deerhorn Creek drainage watershed hazard would increase at the crossings due to 0.15 of a mile of new road construction in the RHCA and installation of new culverts. Even though culverts to be installed are capable of passing 100 year flood events and the area will stabilize over 3 years (pp. 123; FEIS), the area would still have an elevated hazard because we cannot predict how conditions higher in the watershed may change with a large event. Chapter 3 of the FEIS discloses the effects of project activities on water quality and watershed hazard (pp. 128-138).

Hydrology

Existing road beds and proposed road construction may impact hydrologic function. *Measure: Miles of Roads in RHCAs*

- Alternative 4M would construct 0.2 of a mile of new road and through decommissioning of riparian roads reduce the number of miles of roads in RHCAs by 6.2 miles. Currently there are 34.4 miles of closed and open roads in RHCAs and at projects end there will be 24.8 miles of roads within RHCAs. Sediment transport and overland flow concentration will be reduced and shade and riparian vegetation will be enhanced. Chapter 3 of the FEIS discloses the impacts and beneficial effects of road construction, maintenance, and decommissioning (pp. 128-138).

Road Access

Road decommissioning may limit access for future needs. *Measure: Miles of open roads and miles of closed roads after project completion*

- After implementation of Alternative 4M the Galena Project area will contain 75.2 miles of open roads, 105.9 miles of closed roads, and will decommission 21.2 miles of roads. The areas road density will be reduced from 1.9 mi/mi^2 to 1.7 mi/mi^2 in the Vinegar Creek subwatershed and from 1.1 mi/mi^2 to 1.0 mi/mi^2 in the Little Boulder/Deerhorn subwatershed. Alternative 4M will include 9.3 miles of new road construction which is generally proposed to replace approximately 8 miles of open roads planned for decommissioning that are impacting riparian areas. In total, 21 miles of road will be decommissioned. The remainder of the roads to be decommissioned includes approximately 13 miles of closed roads, portions of which are causing resource damage.

  Out of the roads to be closed approximately 65% are less than 0.4 of a mile in length and 90% are less than 1 mile. The Forest road system would continue to provide access, although the balance of open, closed, and decommissioned roads would shift with a decrease in localized access. In other words, the public will continue to have access to all areas currently available with the existing road system, but some short segments of roads that access specific locations within those areas would no longer be accessible by motorized vehicles. Those mining claims within the area that are currently accessed with the existing road system will retain access to their claim; however, the level of road may be reduced to allow for restoration of various resources. Chapter 3 of the FEIS discloses the effects of road activities and access (pp. 252-254).

Wildlife Connectivity Corridors

The proposed activities may reduce the extent or functionality of critical connectivity corridors. *Measure: Number of acres identified for connectivity and miles of road potentially fragmenting corridors*

- Project planning and design for all action alternatives included connectivity corridors between Designated Old Growth (DOG) in accordance with Forest Plan Standards. The Regional Forester's Forest Plan Amendment No.2 provides direction for maintaining connectivity between late old structure (LOS) habitats by at least two different directions to allow the free movement of old growth wildlife species. All action alternatives designate 6,751 acres of connectivity corridors connecting all LOS habitats (pp. 206-207 FEIS). Alternative 4M reduces the miles of roads that have the potential of fragmenting connectivity corridors (pp. 208; FEIS) and reduces the density or roads within the project area (pp. 196, 200; FEIS).

Big Game Security

Increased road density contributes to a loss of big game security. *Measure: Open road density in mi/mi^2*

- To improve wildlife habitat and to provide security for big game, Alternative 4M will reduce disturbance caused by motorized use on roads in the project area through the decommissioning and closing of roads. Currently the road density within the project area meets Forest Plan standards, but does not meet the Forest Plan's desired condition of road densities of 1.5 mi/mi^2 in big game summer range and 1.0 mi/mi^2 in big game winter range. Road density in summer range will be reduced from 2.0 mi/mi^2 to 1.6 mi/mi^2 in the Vinegar Creek subwatershed and from 1.6 mi/mi^2 to 1.3 mi/mi^2 in the Little Boulder/Deerhorn subwatershed. Road density in winter range will be reduced from 3.0 mi/mi^2 to 1.6 mi/mi^2 in the Little Boulder/Deerhorn subwatershed (pp. 196; FEIS). There is no winter range in the Vinegar Creek subwatershed.

Inventoried Roadless Areas, Potential Wilderness Areas, and Undeveloped Areas

Commercial timber harvest, road construction, and mechanical fuel treatment may impact the roadless or undeveloped character of these areas. *Measure: Acres of Potential Wilderness Areas and Other Undeveloped Lands that meet the identification criteria after completion of each alternative*

- Alternative 4M does not propose any timber harvest, road construction, or mechanical fuel treatments within either the Dixie Butte or Greenhorn Mountain Inventoried Roadless Areas. There is commercial thinning, pre-commercial thinning, and road construction proposed for areas meeting the inventory criteria for potential wilderness areas (PWA) and other undeveloped lands within the project area. Potential wilderness areas are lands that meet specific inventory criteria; however PWA is not a land designation (p. 284, FEIS). There are a total of 8,697 acres within the project area that meet the inventory criteria for PWA. Alternative 4M will remove approximately 719 acres from the eligible inventory leaving approximately 7,978 acres in the PWA inventory at projects end.

  Currently there are 9,965 acres of other undeveloped lands that do not meet the PWA inventory criteria in the Forest Service Handbook 1909.12, Chapter 71. At project completion there will be 6,309 acres of undeveloped lands that are not included in the PWA inventory within the project area. Alternative 4M will meet the purpose and need of the project while retaining 90% of the PWA acres and 60% of the acres identified as other undeveloped lands. The effects of the proposed activities to IRAs, PWAs, and other undeveloped lands are disclosed in the FEIS (pp. 283-299).

Sensitive Soils

Soil disturbance would occur with proposed activities that require ground-based equipment. Disturbance could include compaction, displacement, and exposure of the mineral surface to erosion due to the removal of ground cover. *Measure: Percent detrimental impacts to soils after thinning activities*

- Alternative 4M incorporates Design Criteria and Best Management Practices to control erosion of soils and, in turn, effects to watershed condition and aquatic species habitat (pp. 37-38; FEIS). The Forest Plan states that the acres of detrimental conditions, including landings and roads, shall not exceed 20% of the total acreage in any given activity area (unit). None of the units proposed for treatment will exceed Forest Plan Standards after activities occur (pp. 125-126; FEIS). The effects of project activities to soils are disclosed in the Soils Section of the FEIS (pp. 121-127).

Spread of Invasive Weeds

Soil exposure from project activities may provide habitat for noxious and invasive plants. There is the potential for the spread of existing noxious and invasive plant populations by harvest equipment. *Measure: Acres of soil disturbance and prescribed fire*

- Alternative 4M incorporates Design Criteria to control the spread of invasive plants during proposed activities within the project area (pp. 45-46; FEIS). These criteria will reduce the potential spread of invasive species in relation to transportation of road material from pits, road maintenance, road construction and reconstruction, prescribed fire, and equipment and vehicles. There are a total of 19,913 acres of prescribed burning which would overlap all other project activities that would provide an opportunity for the introduction or spread of invasive species. The effects of proposed activities on the spread of invasive plants within the project area are disclosed in the Invasive Plants section of the FEIS (pp. 173-174).

Forage for Livestock

Grazing operations could be adversely impacted by the rest needed after prescribed burning. *Measure: Acres potentially unavailable for permitted grazing after prescribed fire*

- Alternative 4M limits prescribed fire to not more than 5,000 total acres in a given year with the majority of the blocks less than 1,000 acres in a given burn unit (Wildlife Design Criteria #15, pp. 36; FEIS). Alternative 4M incorporates Design Criteria to limit impacts to grazing operations and the infrastructure on grazing allotments within the project area (pp. 44-45; FEIS). Rest would be incorporated after prescribed fire only when the District Rangeland Management Specialist determines that rest is required to allow for the recovery of plants within burn units. The potential effects to grazing and rangeland resources are disclosed in the Rangeland section of the FEIS (p. 264-270).

Economic Viability of the Timber Sale

A number of factors including the number of acres treated by commercial harvest, harvest volume per acre, and amount of road construction may affect the economic viability of the timber sale. *Measure: Net present sale value, generated local income, and local employment estimated for commercial harvest*

- Alternative 4M has a net present sale value to the Forest of -$1,459,346, generate $7,990,505 in local income, and support approximately 272 jobs. The primary reason for the low net present value is the result of helicopter logging units proposed in this alternative which is very expensive at this time. While on the whole this alternative has a low net present sale value, the way timber sales are packaged can make individual sales within the project area viable economically. Market benefits that could occur as a result of the proposed activities include increases in forest productivity and value for the remaining trees by eliminating competitive stress and reducing the risk of growth-limiting insect attack (pp. 281; FEIS). Alternative 4M is expected to generate 7.9 million dollars in direct, indirect, and induced local income and support approximately 272 jobs which is 118 percent over the 2010 annual average of 230 timber related jobs. While net present value is low, the economic benefit to the local economy and infrastructure is higher than any other alternative. The effects of each alternative can be found in the Economics section in Chapter 3 of the FEIS (pp. 275-281).

Findings

***303(d) listed streams*:** Proposed activities may retard improvement in degraded stream conditions. *Finding: Whether the project meets the requirements of the Clean Water Act.*

***Species impacts*:** The proposed activities may impact threatened and endangered species (TES), management indicator species (MIS), and species of concern and their habitat. *Finding: Does the project meet the Endangered Species Act and/or whether it will lead to a trend toward Federal listing of any species.*

***Air quality*:** smoke from prescribed burning would contribute to short term decreased air quality and visibility. *Finding: Whether the project meets the Clean Air Act and State and Federal air quality standards.*

***Cultural resources*:** The proposed project may affect tribal natural and/or cultural resources. *Finding: Whether the project meets the National Historic Preservation Act.*

Other Alternatives Considered

In addition to the selected alternative, I considered three other alternatives, of which brief descriptions are discussed below. A more detailed comparison of these alternatives can be found in the Final EIS, in Chapter 2, on pages 7 through 16.

Alternative 1: The No Action Alternative

This alternative is the "no action" alternative, required by NEPA. Under the no action alternative, no change in existing forest management would occur. Alternative 1 is designed to represent the existing condition and projected future conditions if current forest management continues. The no action alternative is based on the assumption that ecosystems undergo change, even in the absence of active management. It serves as a baseline to compare and describe the differences and effects between taking no action and implementing action alternatives. There would be an increasing risk of large scale disturbance from insects, disease, and uncharacteristic, stand replacement wildfire. There would be no Forest Plan amendment to benefit old growth dependent species and old forest single strata species habitat would remain below HRV. Roads in RHCAs will not be decommissioned and water quality and aquatic habitats would continue to be detrimentally impacted. Aspen stands would continue to decline and eventually will eventually be replaced by the encroaching conifer forest. The no action alternative would not move the project area towards desired conditions and does not meet the purpose and need.

Alternative 2 Proposed Action

Alternative 2 was the Proposed Action, which responds to the need for action to improve forest health by moving stands towards historic conditions. The proposed action would authorize activities in five categories: harvest of trees and biomass, pre-commercial thinning, prescribed burning, associated road activities, and aspen stand restoration.

This alternative incorporates three different commercial harvest treatments and pre-commercial thinning, biomass utilization and prescribed fire to meet the objectives outlined in Chapter 1 of the FEIS. A combination of commercial thinning, understory removal, and return to early seral species would best meet the objectives of the project as described in the purpose and need section in chapter 1. There would be no commercial harvest within RHCAs. Activities would occur on 189 units covering 6,813 acres, producing 24 million board feet in volume as follows:

- Commercial thinning – 129 units, 5,040 acres
- Understory removal – 25 units, 556 acres
- Return to early seral species – 35 units, 1,217 acres

Pre-commercial Thinning

Pre-commercial thinning would occur on 84 units covering 2,781 acres as follows:

- Pre-commercial thinning – 50 units, 1,526 acres
- Pre-commercial thinning in commercial thinning units – returning to 34 units covering approximately 1,255 acres

Biomass Utilization

Efforts would be made to stimulate local markets by utilizing woody biomass generated by this project rather than dispose of it by burning. Potential biomass removal from commercial and pre-commercial thinning units may be possible on 43 units covering approximately 2,063 acres as follows:

- Biomass from pre-commercial thinning units – 26 units, 1370 acres
- Biomass from commercial thinning units – returning to 17 units, 693 acres

Prescribed Burning

This alternative includes prescribed fire, specifically underburning and pile burning, as follows:

- Underburning (ignition) - 19,913 acres
- Riparian Areas fire will be allowed to back into - 3,562 acres
- Hand & Grapple Pile burning - localized piles on 8,339 acres
- Landing Pile Burning – approximately 830 piles

This alternative would meet the purpose and need of the project in much the same way as Alternative 4M, but not at the same scale. Stands in the Deerhorn Creek drainage would not be treated and there would be no defensible space between the untreated area in the Dixie Butte IRA and the County Road 20 escape corridor or private land adjacent to NFS land. As a result, if a large fire occurs in the Dixie Butte IRA it will be difficult to control due to fuel loads, remoteness, and inaccessibility, therefore public and fire fighter safety would remain at the current state. The new road construction reconnecting the orphaned road system would not occur and water quality impacts would continue on Deerhorn Creek from the fords currently being used.

Alternative 3

Alternative 3 was developed in response to key issue #1 (potential resource damage caused by road construction) by not building temporary roads, only constructing a very small amount of new system roads, and harvesting fewer units than the proposed action. Alternative 3 is a 42 percent reduction in acres proposed for commercial thinning, from Alternative 2. This alternative would authorize ground disturbing activities in five categories: commercial thinning and harvest of trees, pre-commercial thinning, prescribed burning, associated road activities, and aspen stand restoration. The order in which these activities could occur is variable. Commercial Harvest Activities would occur on 111 units covering 3,971 acres, producing 14 mmbf in volume utilizing tractor and skyline logging systems. Pre-commercial thinning would occur on 84 units covering 2,781 acres. Prescribed Burning would occur on 19,913 acres including 3,562 acres within riparian areas that would be allowed to underburn, hand and grapple pile burning would occur on 6,167 acres, and there would be approximately 350 landing piles that would be burned. There is no proposed temporary road construction planned under Alternative 3. Additionally, there is no proposal under Alternative 3 to remove the roads from riparian areas and relocate them as described in Alternative 2. The Davis Creek culvert would not be installed and use of the present ford would continue.

Alternative 3 would meet the objectives of the project outlined in Chapter 1 of the FEIS on the treated portions of the project area. Water quality would not improve since decommissioning of roads in RHCAs would not occur and the ford on Davis Creek would not be replaced with a culvert. Stands within the orphaned road system in the Deerhorn Creek drainage would not be treated and there would be no defensible space in the untreated area between the Dixie Butte IRA and the County Road 20 escape corridor or private land adjacent to NFS land.

Alternatives Considered But Eliminated From Detailed Study

Federal agencies are required by NEPA to rigorously explore and objectively evaluate all reasonable alternatives and to briefly discuss the reasons for eliminating any alternatives that were not developed in detail (40 CFR 1502.14). Public comments received in response to the proposed action provided

suggestions for alternative methods for achieving the "purpose and need". Some of these alternatives may have been outside the scope of consideration for timber harvest, duplicative of the alternatives considered in detail, or determined to be components that would cause unnecessary environmental harm. Therefore, some alternatives were considered but eliminated from detailed consideration for reasons summarized below.

Retain All Cover for Big Game

An alternative was considered that would avoid thinning in stands containing hiding cover for big game. The interdisciplinary team recognized that cover is limited in winter range across the forest. Stands in the project area with big game hiding cover have high amounts of fuels and are overstocked to the point of being vulnerable to large-scale disturbance. It was therefore determined that thinning in a portion of the big game cover in hot-dry and warm-dry forest types is necessary to meet the purpose and need for the project. While reductions in stand density contribute to reduced hiding cover, there would be increased forage. In commercial thinning units, variable tree spacing and retention of unthinned areas would provide continued hiding cover for wildlife. For these reasons, the alternative was not analyzed in detail.

Remove Large Diameter Trees

During public scoping, it was requested that an alternative be considered that would commercially thin trees over 21 inches diameter at breast height (dbh). The primary purpose for this alternative would be to provide a greater economic benefit from the sale of large diameter trees. Within the project area there is a deficit of trees over 21". Additionally, removal of live trees greater than 21 inches dbh would require an amendment to Regional Forester's Eastside Forest Plan Amendment #2 - Existing Standard: 6d (2) (a): "Maintain all remnant late and old seral and/or structural live trees greater than 21 inches dbh that currently exist within stands proposed for harvest activities."

The intent of this amendment was to maintain and enhance late and old structure (LOS) forest stands for wildlife species dependent on these habitats. The interdisciplinary team acknowledged a need to maintain LOS stands, including trees greater than 21 inches dbh, within the project area. After giving this alternative careful consideration, I decided not to consider an alternative of removing trees greater than 21 inches dbh.

No Commercial Timber Harvest

Based on feedback from public comments, an alternative was considered that would consist of only pre-commercial thinning and prescribed burning without commercial harvest. This alternative would not include commercial thinning or new road construction. Pre-commercial thinning alone would reduce stocking levels in just the smaller tree diameter classes and would only partially meet the "purpose and need". The addition of prescribed fire may be successful in reducing surface fuels and increasing canopy base heights however, is generally less effective at reducing canopy bulk density. Prescribed fire that kills the larger diameter trees would exceed the acceptable threshold for severity and can be unpredictable to manage. Other constraints including meeting air quality standards would be difficult to achieve due to prolonged smoke emissions. One of the purposes for the project, to reduce the standing vegetation, surface fuels and ladder fuels would not be achieved. For these reasons, this alternative was not analyzed in detail.

No Activities within Inventoried Roadless Areas or Potential Wilderness

All three action alternatives proposed the use of prescribed fire in the two Inventoried Roadless Areas within the project area. All proposed fuel treatment activities are consistent with Forest Plan standards and guidelines, management area standards and guidelines, and the Roadless Area Conservation Rule (RACR). Hazardous fuels treatments in IRAs are not prohibited by the RACR, so long as road construction or reconstruction is not necessary.

None of the action alternatives propose any timber harvest, road construction, or mechanical fuel treatments within IRAs with the exception of aspen treatments. The aspen treatments within IRAs include cutting of generally small diameter timber for the purpose of improving roadless area characteristics as defined in 36 CFR 294.11. These activities fall within those exceptions for cutting of timber provided in the Roadless Area Conservation Rule 2001 (RACR) at 36 CFR 294.13(b)(1)(ii) which allows for the cutting, sale or removal of generally small diameter timber to maintain or restore the characteristics of ecosystem composition and structure, such as to reduce the risk of uncharacteristic wildfire effects, within the range of variability that would be expected to occur under natural disturbance regimes of the current climatic period. The activities also fall within those authorities re-delegated to the Forest Service on October 2, 2009 for the cutting, sale or removal of generally small diameter timber when needed to maintain or restore the characteristics of ecosystem compositions and structure.

There is commercial thinning, pre-commercial thinning, and road construction proposed for areas meeting the inventory procedures in Forest Service Handbook 1900.12 Chapter 71 for potential wilderness areas (PWA) in Alternatives 2 and 4. Alternative 3 did not propose any commercial thinning, pre-commercial thinning, or road construction within these inventoried lands. Potential Wilderness Areas are lands that are identified as meeting the inventory criteria for specific characteristics and not a land designation decision. They do not imply or impart any particular level of management direction or protection, they are not an evaluation of potential wilderness, and lastly they are not preliminary administrative recommendations for wilderness designation. Currently stocking rates and fuel loads would likely result in uncharacteristic, stand replacing wildfire activity when the area burns. Incorporating burning activities would improve forest health and resiliency, while mitigating fuel loads. Lack of fuel treatments within the IRAs and PWAs would leave stands more vulnerable to a large scale, high severity wildfire, especially on the north slopes of Dixie Butte and in the Indian Rock/Vinegar Hill scenic area.

Environmentally Preferable Alternative

Under the Environmental Policy Act, the agency is required to identify the environmentally preferable alternative (40 CFR 1505.2(b)). This is interpreted to mean the alternative(s) that would cause the least damage to the biological and physical components of the environment, and which best protects, preserves, and enhances, historic, cultural, and natural resources (Council on Environmental Quality, *40 Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations,* 46 Federal Register 18026). Factors considered in identifying this alternative include: (1) fulfilling the responsibility of this generation as trustee of the environment for future generations; (2) providing for a productive and aesthetically pleasing environment; (3) attaining the widest range of beneficial uses of the environment without degradation; (4) preserving important natural components of the environment, including biodiversity; (5) balancing population needs and resource use; and (6) enhancing the quality of renewable resources. An agency may discuss preferences among alternatives based on relevant factors, including economic and technical considerations and statutory missions (40 CFR 1505.2(b)).

Based upon my examination of the EIS, discussions with the IDT, and consideration of comments received from agencies and the public I have concluded that Alternative 4M is the Environmentally

Preferred Alternative. Alternative 4M will improve the overall health, resiliency, and sustainability of the forest for future generations; provide a healthy, visually appealing landscape; increase growth and productivity; provide benefits to the environment and the local economy; provide additional habitat for wildlife species while preserving areas of existing habitat for wildlife; and improve riparian and aquatic habitat for ESA listed fish species through the decommissioning of roads in RHCAs and replacement of culverts that prohibit passage. These positive outcomes are achieved without significant differences in effects to the environment when compared with the other action alternatives.

Specific Issues of Concern

Specific issues of concern were brought to my attention from interdisciplinary team members as well as members of the public during the comment period for the Galena Project Draft Environmental Impact Statement. The following summarizes the concerns brought to my attention and my conclusions.

New Road Construction and the Crossing on Deerhorn Creek

Concerns have been raised by the public during scoping and the comment period as well as by members of the Blue Mountains Forest Partners about the amount of new road construction in general. Specifically a new road and crossing in the Deerhorn Creek drainage that would access a road system that was orphaned when a ford across the MFJD was closed for public safety and habitat concerns for ESA listed fish species.

After much consideration of the issues raised I have decided that the amount of new road construction will be reduced by 5.4 miles from the original proposal of 14.7 miles. Temporary roads will be substituted for new roads that were not intended to replace roads causing resource damage. These temporary roads will provide access to areas that need vegetative treatments and will be rehabilitated immediately following harvest activities.

Concerning the controversial issue of the construction of approximately one mile of road and the installation of two culverts on Deerhorn Creek and an adjacent tributary I have decided that the benefits outweigh the potential impacts. The road and crossing will provide alternate access to the orphaned road system. This will allow for the decommissioning of the closed ford across the MFJD and approximately ¼ mile of road that is used to access the system roads. This tradeoff is, I believe, the most beneficial to water quality and will reduce impacts to ESA listed fish species in the Middle Fork John Day River.

Another point of concern for me is the lack of defensible in the untreated area between the Dixie Butte IRA and the County Road 20 escape corridor identified in the Grant County Community Fire Protection Plan (GCCFPP). I am convinced that a large fire within the IRA will be difficult and dangerous to control and that it is necessary to provide defensible space between the IRA, private land, and the escape corridor. This road system will allow treatment of this defensible space.

Availability of Funds for Road Decommissioning and Culvert Replacement

Concerns have been raised in regards to funding the decommissioning of riparian roads and culvert replacements that would not be associated with commercial timber sales. The John Day River sub-basin is one of national biological significance, being the second largest free-flowing stream in the continental United States and one of only two river systems in the entire Columbia River basin managed exclusively for wild anadromous fish. The Middle Fork John Day River, historically, was likely the John Day basin's most productive sub-basin. This has resulted in the Middle Fork John Day River being identified as a high priority watershed for restoration efforts and a considerable amount of funding has historically been

available for private as well as NFS lands. The Forest has in the recent past been very successful obtaining funds to implement restoration projects within the watershed through several funding sources. I have reason to believe the Forest will be successful in securing funding for these restoration efforts.

Reduction of Satisfactory Cover, Effectiveness of Road Closures and Big Game Security

Concerns have been raised concerning the effects of reducing satisfactory cover and the effectiveness of road closures as a mitigating factor for big game security. For the mitigation to be adequate to counter the loss of satisfactory cover, it will be necessary to have effective closures on roads identified to be closed. Roads that are not effectively closed would likely continue to be used and not provide security for big game. The Forest has lacked the effectiveness of closing roads and restricting the unauthorized use in the past. Enforcement of the closures has been difficult in the past due to the lack of law enforcement personnel.

Having recognized the issues above, along with public concerns over the amount of new road construction in the selected alternative, I have decided to reduce the amount of new road construction and replace some of the proposed new construction with temporary roads. I am also aware that Forest Service personnel have begun having discussions with the Blue Mountain Forest Partners collaborative seeking ideas on how we might manage closed roads in a more effective manner. I am confident that with a collaborative approach to the implementation of closures, it will be possible to effectively close roads to significantly reduce unauthorized use.

Vegetative and Fuel Treatments adjacent to or within IRAs/PWAs

Two commenters raised concerns over vegetative treatments adjacent to IRAs and PWAs and prescribed fire within IRAs and PWAs. Due to these concerns being raised, I met with members of the IDT to consider the comments, and to discuss and re-examine the reasons treatments in these areas were proposed. Alternative 4M would provide additional fuel breaks and more defensible space between the Dixie Butte IRA and the County Road 20 escape corridor identified in the Grant County Community Fire Protection Plan. Reasons for this conclusion include those described above concerning IRAs and PWAs under the “Alternatives Considered but Eliminated from Detailed Study” section of this Decision. I believe that by treating the stands in question will provide a buffer of defensible space between the untreated areas within IRAs and the County Road 20 escape corridor as well as private land adjacent to NFS land. It is my conclusion that a large fire within the IRA will be difficult to control due to fuel loads, remoteness, inaccessibility and safety concerns for firefighters. Therefore it is important to create defensible space between the Dixie Butte IRA and the escape corridor that will provide for more public and firefighter safety.

Economic Viability of Timber Sales

Several commenters also brought up the question of the economic viability of timber sales associated with the project. While the net present value is lower than the other action alternatives, due primarily to helicopter logging, the benefits to the local economy and job creation is higher than the other alternatives. In addition, the low net present sale value can be improved by the way timber sales are packaged, thus individual sales within the project area can be viable economically. For instance, the helicopter units may be packaged for sale with other helicopter units from other planning areas may provide a viable sale. Future market benefits that could occur as a result of the proposed activities include increases in forest productivity and value for the remaining trees by eliminating competitive stress and reducing the risk of growth-limiting insect attack (pp. 281; FEIS). Alternative 4M is expected to generate 7.9 million dollars in direct, indirect, and induced local income and support approximately 272 jobs which is 118 percent

over the 2010 annual average of 230 timber related jobs in the regional impact zone. Though concerns that were raised are valid, after careful consideration of the available information I am convinced that the benefits of the project to natural resources, public safety, and the local economy outweigh the potential lack of viability of timber sales associated with this project.

Public Involvement

A notice of intent to prepare an EIS was published in the Federal Register on March 12, 2009 (**Federal Register** /Vol. 74, No. 47 /Thursday, March 12, 2009 /Notices). In addition, the proposed action was listed in the Malheur National Forest Schedule of Proposed Actions and updated periodically during the environmental analysis. People were invited to review and comment on the proposal through a formal scoping package sent to around 160 individuals, groups, federal and state agencies at the same time the NOI was published. Eleven comments were received in response. A letter was mailed to local landowners and a newspaper article published in the Blue Mountain Eagle on February 18, 2009 inviting interested parties to a public meeting on April 8, 2009, where three people attended. In November 2008 the Galena project was presented to the local Blue Mountain Forest Partners (BMFP) collaborative. The collaborative group decided to not formally collaborate on this project; however, the general guidelines provided by the collaborative group on other forest projects were considered by the ID team during the development of the Galena project. The FEIS lists agencies, organizations, and people who received copies in Chapter 4.

A draft environmental impact statement (DEIS) was published for review and comment on March 25, 2011. A Notice of Availability (NOA) was published in the Federal Register (**Federal Register** /Vol. 76, No. 58 / Friday, March 25, 2011 /Notices). The NOA requested comments during the 45 day comment period on the Draft EIS from agencies, groups, and individuals. In the development of the Final EIS comments made to the DEIS were assessed and considered in the preparation of the FEIS and the Record of Decision (ROD). A list of comments received and the agencies response to the comments can be found in Appendix D of the Galena Project FEIS.

Findings Required by Other Laws and Regulations

After consideration of the discussion of environmental consequences (FEIS, Chapter 3), I find that actions associated with Alternative 4M are consistent with all applicable laws and regulations. This decision incorporates by reference the detailed discussions of policy and law consistency presented in the FEIS, Chapter 3. Below are listed some of the most significant laws and executive orders that guided the development and analysis of the project:

The National Forest Management Act (NMFA)

With the exceptions stated in the paragraphs that follow, I find this decision is consistent with the Malheur National Forest Land and Resource Management Plan, as amended. The project was designed in conformance with the Desired Future Condition and Forest-wide and management area standards and guidelines of the Forest Plan. Based upon the Wildlife and Fisheries reports I find that the project will not have any adverse effects to the long term viability of any Forest Plan management indicator species (MIS) with habitat in the project area.

There are two exceptions that are not consistent with existing standards in the Forest Plan. I have decided on two site-specific, non-significant, amendments to Dedicated Old Growth (DOG) and Replacement Old Growth (ROG) and big game satisfactory cover.

The amendment to DOGs and ROGs will increase acreages of these designated areas to bring them up to Forest Plan Standards following the protocol established by the Forest Plan. The adjustments of the management area boundaries are the result of further on-site analysis and do not cause significant changes to the multiple use goals and objectives for long term land and resource management. Therefore I find this to be a non-significant amendment.

The amendment to big game satisfactory cover will reduce satisfactory cover in portions of several units. Based upon the Wildlife effects analysis I find that the reduction in satisfactory cover is non-significant because:

- Habitat Effectiveness Index will remain above Forest Plan Standards for both summer and winter range
- Total combined reduction in satisfactory cover is less than 200 acres scattered over several units that are not adjacent to one another
- The area is still above Forest Plan standards in overall cover; that there will be an increase in forage quantity and quality as a result of planned activities
- Planned road closures and decommissioning will provide additional security for big game.

Additionally, I find that the amendment constitutes a minor, site specific change in standards and guidelines, and will not significantly alter the multiple use goals and objectives for long term land and resource management as outlined in the Forest Plan.

The National Environmental Policy Act (NEPA)

NEPA establishes the formal content and requirements of environmental analysis and documentation, as well as requirements for public involvement and disclosure. The entire process of preparing this environmental impact statement was undertaken to comply with NEPA including identifying the purpose and need for action, development of a proposed action, public involvement, the development of alternatives, and the interdisciplinary analysis of effects.

The Endangered Species Act (ESA)

The U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) provided a list of threatened and endangered species that have the potential to occur in Grant County for consideration in environmental analyses. No Threatened or Endangered species are present within the project area and there is no designated or proposed critical habitat for terrestrial species in the affected watersheds. A biological evaluation (BE) was prepared addressing the potential impacts to threatened, endangered, proposed, and sensitive species (TEPS). The Wildlife Biological Evaluation indicated that the project would have “No Effect” to the endangered gray wolf or Canada lynx and no further consultation with the USFWS was warranted. The Fisheries Biological Evaluation indicated that the project would “Likely to Adversely Affect” Columbia River bull trout, Mid-Columbia River steelhead and Designated Critical Habitat for both species with a long term “Beneficial Effect.”

Biological Assessments were prepared to document the possible effects of the proposed activities to endangered and threatened species within the project area. Appropriate coordination, conferencing, and consultation with the National Marine Fisheries Service (NMFS) have been completed and NMFS has issued a Biological Opinion with terms and conditions that are incorporated in this decision.

The Clean Water Act and 303(d) Listed Streams

The Forest Service's responsibilities under the Clean Water Act are described in a May 2002 Memorandum of Understanding (MOU) between the Oregon Department of Environmental Quality and the Forest Service. The Forest Service is directed to comply with State requirements in accordance with the Clean Water Act for protection of waters of the State Of Oregon (OAR chapter 34041) through planning, application, and monitoring of Best Management Practices (BMPs), which are recognized as the primary means to control non-point source pollution on National Forest lands. The MOU also directs that the Forest Service cannot further degrade water quality impaired streams. This decision is consistent with the Clean Water Act and the Forest Plan because it would not measurably increase watershed impacts, including stream temperature or biocriteria over the existing condition.

The Clean Air Act

The Clean Air Act (CAA) requires measures to "preserve, protect, and enhance" the quality of air resources. State implementation plans are developed to implement provisions of the CAA, specifically the National Ambient Air Quality Standards. Since project activities will meet the requirements of the State and Federal air quality requirements, there will be no effect to air quality standards as defined in the Act. Burning will follow the guidance provided by the Oregon Smoke Management Plan and specifically, Directive 1-4-1-601, the Operational Guidance for the Oregon Smoke Management Program.

American Antiquities Act of 1906, Natural Historic Preservation Act of 1966

Consultation with the Confederated Tribes of Warm Springs Reservation of Oregon, the Confederated Tribes of the Umatilla, and the Burns Paiute Tribe was performed several times before and during the preparation of this EIS. A cultural resource inventory has been completed for the project area. The Forest Archeologist has certified that this project will have no effect to heritage sites since disturbance to sites would be avoided and therefore complies with Section 106 and 110 of the national Historic Preservation Act of 1996.

Executive Order 12898 of 1994, Environmental Justice

Executive Order 12898 requires federal agencies to identify and address any disproportionately high and adverse human health or environmental effects on minority and low income populations. The proposed action was assessed to determine whether it would disproportionately impact minority or low income populations, in accordance with the Executive Order. The analysis documented in the EIS found that none of the action alternatives were found to have significant environmental effects to minority or low income populations.

Executive Order 13186 of 2001, Migratory Bird Treaty Act

This decision is consistent with the Migratory Bird Treaty Act. The analysis of effects to migratory birds in the FEIS document that design features incorporated into this decision will minimize any take of migratory birds and meet the intent of the law. Therefore, I find that there are no known substantial losses of migratory bird habitat expected from the implementation of this proposal. It is my determination that the proposed action will not cause a trend toward federal listing of any migratory bird species, or loss of habitat viability within the general location of the proposed activity.

Executive Order 11988 of 1977, Floodplain Management

This decision incorporates Best Management Practices and Terms and Conditions outlined in the USFWS and NMFS biological opinions. I find that this decision will not disrupt or impede the function of the floodplain and will preserve or maintain the natural and beneficial values served by flood plains.

Executive Order 11990 of 1977, Protection of Wetlands

This decision incorporates Best Management Practices and Terms and Conditions outlined in the USFWS and NMFS biological opinions. This decision will maintain and enhance the natural and beneficial values of wetlands.

Administrative Review (Appeal) Opportunities

This decision is subject to appeal pursuant to 36 CFR 215. The 45-day appeal period begins the day following the date the legal notice of this decision is published in the *Blue Mountain Eagle*, John Day, Oregon. Only individuals or organizations that submitted comments or otherwise expressed interest during the 45-day comment period, which ran from March 25, 2011 to May 9, 2011, may appeal this decision. Appeals may be:

1. Mailed to: *Appeal Deciding Officer, Pacific Northwest Region, USDA Forest Service, Attn. 1570 Appeals, PO Box 3623, Portland, OR 97208-3623*;
2. Emailed to: *appeals-pacificnorthwest-regional-office@fs.fed.us.* Please put APPEAL and the project name in the subject line. Electronic appeals must be submitted as part of an actual e-mail message or as an attachment in Microsoft Word (.doc), rich text format (.rtf), or portable document format (.pdf) only. Emails submitted to addresses other than the ones listed above or in formats other than those listed above or containing viruses will be rejected. It is the responsibility of the appellant to confirm receipt of appeals submitted by electronic mail. For electronically mailed appeals, the sender should normally receive an automated electronic acknowledgement from the agency as confirmation of receipt. If the sender does not receive an automated acknowledgement of the receipt of the appeal, it is the sender's responsibility to ensure timely receipt by other means;
3. Delivered to: Pacific Northwest Regional Office, 1220 SW 3rd Avenue, Portland, OR 97204. Hand deliveries can occur between 8:00 AM and 4:30 PM, Monday through Friday except legal holidays; or
4. Faxed to: *Regional Forester, Attn: 1570 APPEALS at* ***(541)808-2339***

Notices of appeal must meet the following appeal requirements outlined in 36 CFR 215.14:

1. State that the document is an appeal filed pursuant to 36 CFR 215;
2. List the name and address of the appellant, and if possible, a telephone number;
3. Identify the decision document being appealed by the title and subject, date of the decision, and name and title of the Responsible Official;
4. Identify the specific change(s) in the decision that the appellant seeks or the portion of the decision to which the appellant objects; and

5. State how the Responsible Official's decision fails to consider comments previously provided, either before or during the comment period in 36 CFR 215.6 and, if applicable, how the appellant believes the decision violates law, regulation, or policy.

Implementation Date

If no appeals are filed within the 45 day time period, implementation of the decision may occur on, but not before 5 business days from the close of the appeal filing period. When appeals are filed, implementation may occur on, but not before, the 15th business day following the date of the last appeal disposition.

Contact

For additional information concerning this decision, contact: David Halemeier, District Ranger, Blue Mountain Ranger District, PO Box 909, John Day, OR 97845 or at 541-575-3401.

Teresa Raaf — September 10, 2013

TERESA RAAF — Date

Forest Supervisor